

What is claimed is:

- Sub 17
1. An optical shutter drive device comprising¹⁵¹
an optical shutter module arraying a plurality of optical
shutter elements^{152/161} having an electro-optic effect; and¹⁵⁸
5 a driver for modulating the ON time of each optical shutter
element based on the image data; //
wherein said driver can modulate each optical shutter
element at a gradient corresponding to a predetermined number
of bits so as to drive the optical shutter element at a gradient
10 exceeding a maximum gradient at a predetermined number of bits
without turning OFF the optical shutter element when driving one
line. //
2. An optical shutter drive device according to claim 1,
wherein said driver turns ON each optical shutter element with
15 a dispersed timing.
3. An optical shutter drive device according to claim 1,
wherein the predetermined number of bits is fewer than the number
of bits of the image data.
4. A solid state scanning type optical recording device
20 comprising:
optical shutter elements having an electro-optic effect;
and
a driver for dividing one line into a plurality of sections
in the subscan direction and modulating the ON time of said optical

shutter elements based on the image data of each section by a predetermined number of bits fewer than the number of bits of the image data, and driving said optical shutter element at a gradient exceeding a maximum gradient corresponding to the
5 predetermined number of bits;

wherein the driver includes a shift register for forwarding image data synchronously with a shift clock;

a latch register for latching image data of one section within said shift register in response to a strobe signal;

10 a counter for counting standard clock signals; and

a comparator for turning ON each optical shutter element, comparing the value latched in the latch register with the count value of the counter, and turning OFF each optical shutter element when both values match.

15 5. A solid state scanning type optical recording device according to claim 4, wherein said driver is constructed not to transmit said comparator the standard clock signal corresponding to the maximum count value of the fixed number of bits.

20 6. A solid state scanning type optical recording device according to claim 4, wherein the timing is shifted for generating the strobe signal and resetting said counter.

7. A solid state scanning type optical recording device according to claim 4, wherein said driver turns ON each optical shutter element with a dispersed timing.

8. A solid state scanning type optical recording device according to claim 4, wherein said driver is constructed so as to avoid turning OFF a plurality of optical shutter elements with identical timing to transmit image data to said shift register.

5 9. A solid state scanning type optical recording device according to claim 4, wherein said driver is constructed so as to avoid a timing for turning ON said optical shutter element to transmit image data to said shift register.

10 10. A solid state scanning type optical recording device according to claim 9, wherein said driver transmits image data corresponding to the first and second sections to said shift register, thereafter drives said optical shutter elements based on the image data corresponding to the first section, and thereafter transmits image data corresponding to the third
15 section to said shift register.

11. An electro-optic element drive device comprising:
electro-optic elements having an electro-optic effect;
and

20 a driver for modulating the ON time of the electro-optic elements based on the image data by a predetermined number of bits, and driving the electro-optic element at a gradient exceeding a maximum gradient corresponding to the predetermined number of bits.

12. An electro-optic element drive device according to

claim 11, wherein the predetermined number of bits is fewer than the number of bits of the image data.

13. An electro-optic element drive device according to claim 11, wherein said electro-optic elements are optical shutter.

14. An electro-optic element drive device according to claim 11, wherein said driver turns ON each electro-optic elements with a dispersed timing.

15. An electro-optic element drive device according to claim 11, further comprising a counter for counting standard clock signals, wherein said driver turns ON each electro-optic elements when count value of the counter reaches to the number corresponding to the image data.

16. An electro-optic element drive device according to claim 15, wherein said counter resets the count value without counting the standard clock signals corresponding to the maximum gradient.